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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/621,825	07/21/2000	Jung Tae Kang	06192.0146AA	4506

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MACPHERSON KWOK CHEN & HEID LLP
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EXAMINER

NGUYEN, JIMMY H

ART UNIT	PAPER NUMBER
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2629

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	03/20/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary

Application No.

09/621,825

Applicant(s)

KANG ET AL.

Examiner

Jimmy H. Nguyen

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 29 January 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-23 is/are pending in the application.
- 4a) Of the above claim(s) 2-4, 6-8 and 14-17 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1, 5, 9-13 and 18-23 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 1/29/2007 has been entered. Claims 1-23 are currently pending in the application. Claims 2-4, 6-8 and 14-17 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to nonelected species I and III. Claims 1, 5, 9-13 and 18-23 are currently considered. An action follows below:

Important Notice to Applicants

2. It is noted to Applicants that claims 2-4, 6-8 and 14-17 are withdrawn from consideration because claims 2-4, 6-8 and 17 contain the features read on non-elected Species I only and claims 14-16 contain the features read on non-elected Species I only. Further, during the examination, the amended claim 5 is now currently drawn to elected Species II only. Therefore, if claim 5 is allowable, dependent claims 6-8 and 14-17 are not considerably allowable. Claims 2-4 read in the non-elected Species I stand alone in a group. Because of these reasons, Examiner suggests the Applicants to cancel claims 2-4, 6-8 and 14-17.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1, 5, 9-13, and 18-23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yun et al (USPN: 5,835,139), hereinafter Yun, in view of Murai (USPN: 5,986,726), and further in view of Williamson et al. (USPN: 5,475,381), hereinafter Williamson.

As to **claim 1**, Yun discloses a LCD device (see a LCD device as shown in fig. 7) comprising a **monitor unit** (a LCD assembly structure as shown in fig. 6) including a **backlight assembly** (an assembly including elements 110-180, see fig. 6) having a **light source** (a luminescent lamp 110; see Fig. 6), a **LCD panel** (a liquid crystal panel 300; see Fig. 6) arranged on the backlight assembly (110-180), a **mold frame** (a first support frame 190, see Fig. 6), and a **chassis** (a second frame support 400, see Fig. 6); and an **information processing module** (a driving circuit board 23, col. 2, lines 18-20, best seen in Fig. 1) inherently including a video signal processing unit for generating video signals and for providing video signals to the liquid crystal panel via a flexible film (see col. 2, lines 18-20). Further, the Yun device comprises an inherent central processing unit, an **input device** (a keyboard, see Fig. 5 or 9) connected to the central processing unit, drivers for providing gate driving signal and data driving signal to the LCD panel (see Fig. 6), and a flexible film coupled between the information processing module (23) and the LCD panel (see col. 2, lines 18-20). However, Yun does not disclose expressly the central processing unit disposed or comprised in the information processing unit (23) and a printed circuit board comprising driver(s) disposed thereon. Accordingly, Yun discloses all the claimed limitations except for the mold frame formed to be gradually thinner as further advancing from a first side adjoining the light source toward a second side opposite the first side; the chassis formed to be gradually thinner as further advancing from a first side adjoining the light source toward a second side opposite the first side; a printed circuit board; and a central

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processing unit comprised in the information processing unit, in the manner as presently recited in the claim 1.

However, regarding to the limitation **“the mold frame formed to be gradually thinner as further advancing from a first side adjoining the light source toward a second side opposite the first side”**, as noting in fig. 5, Murai discloses a related information processing apparatus (fig. 5) comprising a mold frame (a frame structure corresponding to the claimed mold frame and defined by the metal sheet 1 and the resin frame 2, col. 4, lines 10-12), that accepts the backlight assembly (7) (figs. 1, 2 and 5, col. 4, lines 10-12) and a LCD panel (5) (figs. 1, 2 and 5, col. 3, lines 64-66), and formed closely to the rear surface of the backlight assembly, so as to form the mold frame gradually thinner as further advancing from a first side (the side to the left of the light guiding plate 7, as shown in figs. 1 and 5) adjoining the light source toward a second side (the side to the right of the light guiding plate 7) opposite the first side. Further see col. 4, lines 16-39. It would have been obvious to a person of ordinary skill in the art at the time of the invention was made **to modify the Yun mold frame formed closely to the rear surface of the backlight assembly, so as to form the mold frame gradually thinner as further advancing from a first side adjoining the light source toward a second side opposite the first side, while maintaining the rear surface of the mold frame still to be rectangular in shape**, in view of the teaching in the Murai reference, because this would provide an apparatus with features of small size, thin thickness and light weight, as taught by Murai (col. 2, lines 1-3).

Further, regarding to the limitation **“the chassis formed to be gradually thinner as further advancing from a first side adjoining the light source toward a second side opposite the first side”**, while Murai exemplifies only the mold frame formed to be gradually thinner as

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further advancing from a first side adjoining the light source toward a second side opposite the first side and may not exemplify the chassis formed to be gradually thinner as further advancing from a first side adjoining the light source toward a second side opposite the first side; however, since the Yun backlight assembly has a wedge shape as viewed from a side, it would have been within the level of skill in the art and obvious to one having ordinary skill to engineering design the shape of the Yun chassis as desired (i.e., the chassis formed to be gradually thinner as further advancing from a first side adjoining the light source toward a second side opposite the first side) as the shape of the modified mold frame, which is taught by the Murai reference, and as was judicially recognized in re Dailey, 149 USPQ 47 (CCPA 1976), because this would provide an apparatus with features of smaller size, thinner thickness and lighter weight, as taught by Murai (col. 2, lines 1-3).

Further, regarding to the claimed printed circuit board, Murai teaches a printed circuit board comprising a tape carrier package (TCP) 6 (see Fig. 1) and driver IC 61 (see Fig. 1) disposed on the TCP 6, thereby reducing the size of the device (see col. 2, lines 1-3). Therefore, it would have been obvious to a person of ordinary skill in the art at the time of the invention was made to utilize Murai teaching, i.e., providing the Yun drivers on the Yun flexible film, in the Yun device, Because this would further reduce the size of the device, as taught by Murai (see col. 2, lines 1-3).

Accordingly, the combination of Yun and Murai discloses all the claimed limitations except for the central processing unit comprised in the information processing unit, as recited in the claim 1. However, as noting in Figs. 1-2, Williamson discloses a LCD device (see Figs. 1 and 2) comprising an information processing module (a module including elements 56-59, 61, 70, 71,

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73, and 90, see Fig. 2) including a central processing unit (a microcontroller 56, col. 3, lines 27-32). It would have been obvious to a person of ordinary skill in the art at the time of the invention was made to utilize Williamson's teaching above, i.e., locating the Yun central processing unit in the Yun information processing unit, because this would reduce the size of the apparatus which is small enough to fit into a pocket, as taught by Williamson (col. 2, lines 54-60). Therefore, it would have been obvious to a person of ordinary skill in the art at the time of the invention was made to combine Yun, Murai, and Williamson to obtain the invention defined by claim 1.

As to **claim 18**, Yun discloses a **display device** (see a LCD device as shown in fig. 7) comprising a **LCD module** (or a monitor unit) (a LCD assembly structure as shown in fig. 6) including a **backlight assembly** (an assembly including elements 110-180, see fig. 6) having a **light source** (a luminescent lamp 110, see Fig. 6) and a **rear surface** (a rear surface of a reflector 140 is a rear surface of the backlight assembly; see Fig. 6), a **LCD panel** (a liquid crystal panel 300, see Fig. 6) arranged on the backlight assembly (110-180), a **mold frame** (a first support frame 190, see Fig. 6) receiving the backlight assembly (110-180) and extending over the entire rear surface of the backlight assembly (see Fig. 6), and a **chassis** (a second frame support 400, see Fig. 6) coupled to the mold frame (190) to fix the backlight assembly and the LCD panel therebetween (see Fig. 6; col. 4, lines 48-54); and an **information processing module** (a driving circuit board 23; see col. 2, lines 18-20, best seen in Fig. 1) inherently including a video signal processing unit for generating video signals and for providing video signals to the liquid crystal panel via a flexible film (see col. 2, lines 18-20). Further, the Yun

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device comprises an inherent central processing unit, an input device (a keyboard, see Fig. 5 or 9) connected to the central processing unit, drivers for providing gate driving signal and data driving signal to the LCD panel (see Fig. 6), and a flexible film coupled between the information processing module (23) and the LCD panel (see col. 2, lines 18-20); however, Yun does not disclose expressly the central processing unit disposed or comprised in the information processing unit (23) and a printed circuit board comprising driver(s) disposed thereon.

Accordingly, Yun discloses all the claimed limitations except for the information processing module attached to a rear surface of the mold frame, a printed circuit board, and the central processing unit comprised in the information processing unit, in the manner as presently recited in the claim 18.

However, regarding to the claimed limitation “the information processing module attached to a rear surface of the mold frame” as recited in the claim 18, Murai, as noting in fig. 1, teaches the display device (see Fig. 1) comprising **a mold frame (a frame structure** corresponding to the claimed mold frame and defined by the metal sheet 1 and the resin frame 2, see Fig. 1, col. 4, lines 10-12), that accepts **the backlight assembly (7)** (Fig. 1, col. 4, lines 10-12) and a LCD panel (5) (Figs. 1, 2 and 5, col. 3, lines 64-66), and **an information processing module** (a module including a driver circuit board 4 and an isolation film 3) **directly attached to a rear surface of the mold frame** (a bottom surface of a metal sheet 1, i.e., a rear surface of the frame structure), for generating and supplying a driving signal to drive LCD panel via the source printed circuit board (a driver circuit provided in peripheral edges of the circuit array substrate, col. 5, lines 40-53). It would have been obvious to a person of ordinary skill in the art at the time of the invention was made **to relocate the Yun information processing module (23) on a rear**

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plane of the Yun mold frame, in view of the teaching in the Murai reference, because this would substantially prevent electromagnetic wave noises generated by a driver circuit board from interfering with other electronic components, as taught by Murai (see col. 2, lines 8-11).

Further, regarding to the claimed printed circuit board, as noting in Fig. 1, Murai teaches a printed circuit board comprising a tape carrier package (TCP) 6 (see Fig. 1) and driver IC 61 (see Fig. 1) disposed on the TCP 6, thereby reducing the size of the device (see col. 2, lines 1-3). Therefore, it would have been obvious to a person of ordinary skill in the art at the time of the invention was made to utilize Murai teaching, i.e., providing the Yun drivers on the Yun flexible film, in the Yun device, Because this would further reduce the size of the device, as taught by Murai.

Regarding to the claimed limitation "the central processing unit comprised in the information processing unit" as recited in the claim 18, as noting in Figs. 1-2, Williamson discloses a LCD device (see Figs. 1 and 2) comprising an information processing module (a module including elements 56-59, 61, 70, 71, 73, and 90, see Fig. 2) including a central processing unit (a microcontroller 56, col. 3, lines 27-32). It would have been obvious to a person of ordinary skill in the art at the time of the invention was made to utilize Williamson's teaching above, i.e., locating the Yun central processing unit in the Yun information processing unit, because this would reduce the size of the apparatus which is small enough to fit into a pocket, as taught by Williamson (col. 2, lines 54-60).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time of the invention was made to combine Yun, Murai, and Williamson to obtain the invention defined by claim 18.

As to claim 5, since all the limitations of this claim recited in claims 1 and 18, this claim is therefore rejected for the same reasons as set forth in claims 1 and 18 above.

As to claims 9, 20 and 23, Yun device comprises an inherent data storage for storing or supplying data in response to the control signals from the central processing unit. Yun does not expressly teach the data storage disposed in the information processing module, as presently claimed. However, as noting in figs. 1-2, Williamson discloses data storage (61) disposed in the information processing module. It would have been obvious to a person of ordinary skill in the art at the time of the invention was made to locate the data storage in the Yun information processing module, in view of the teaching in the Williamson reference, because this would reduce the size of the apparatus which is small enough to fit into a pocket, as taught by Williamson (col. 2, lines 54-60).

As to claim 10, see the rejection to claim 18 above.

As to claims 11 and 19, Yun further teaches the LCD module and the information processing module, both fixed together between a front case (520) and a rear case (500) coupled to each other (fig. 7, col. 4, lines 55-65).

As to claims 12 and 21, Williamson further teaches the storage unit (61) comprising RAMs (62, 63) and ROM (64) (col. 3, lines 38-41).

As to claims 13 and 22, Williamson further teaches the information processing module further comprising interfacing means for interfacing data with an external information processing module (col. 7, lines 8-10), sound control means (system speaker 72, col. 4, lines 17-19) and

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communicating means for performing external communication (IR emitter 53 and IR receiver 54, see fig. 2).

Response to Arguments

5. Applicant's arguments filed 01/29/2007 have been fully considered but they are not persuasive.

With respect to the rejection under 35 USC 103(a) to independent claims 1 and 5,

Applicants argue:

"A review of the Murai reference (the '726) reveals that, while the purported "mold frame" (triangular metal sheet 1 and resin ring frame 2 of Figs. 2 and 5 of Murai) may incorporate a tapering shape, the Murai chassis 8 ('726, Fig. 2) is conventionally rectangular in shape, and hence, teaches directly away from such a tapering shape ... "This is truly "boot strap" analog, because neither reference teaches or even suggests this chassis shape, but to the contrary, its non-obviousness is evidenced by the fact that, although Murai incorporated such a shape in his "mold frame," and was also purportedly concerned with providing a smaller, thinner, lighter display, Murai nevertheless failed to incorporate such a shape into his own chassis. Accordingly, the motivation for incorporating such a shape into Yun's chassis is completely lacking."

See page 8 last paragraph through page 9, line 7, of the amendment. While the Examiner agrees with the Applicants about the shapes of mold frame and chassis of Murai, Examiner disagrees because as discussed in the detailed rejection above, Murai teaches the mold formed closely to the rear surface of the backlight assembly, so as to form the mold frame gradually thinner as further advancing from a first side adjoining the light source toward a second side (the side to the right of the light guiding plate 7) opposite the first side, thereby providing an apparatus with features of small size, thin thickness and light weight. Further, the Yun backlight assembly has a wedge shape as viewed from a side. Therefore, it would have been within the level of skill in the art and obvious to one having ordinary skill to engineering design the shape of the Yun chassis as desired (i.e., the chassis formed to be gradually thinner as further advancing from a first side adjoining the light source toward a second side opposite the first side) as the shape of the

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modified mold frame, which is taught by the Murai reference, and as was judicially recognized in re Dailey, 149 USPO 47 (CCPA 1976), because this would provide an apparatus with features of smaller size, thinner thickness and lighter weight, as taught by Murai (col. 2, lines 1-3).

With respect to the rejection under 35 USC 103(a) to independent claim 18, Applicants argue that none of the art of record teaches the newly added limitation, “a mold frame ... extending over substantially the entire rear surface of the backlight assembly”; see page 9 of the amendment. Examiner disagrees because as discussed in the detailed rejection above, Yun expressly teaches a **mold frame** (a first support frame 190, see Fig. 6) receiving the backlight assembly (110-180) and extending over the entire rear surface of the backlight assembly (see Fig. 6).

Conclusion

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jimmy H. Nguyen whose telephone number is 571-272-7675. The examiner can normally be reached on Monday - Friday, 6:30 a.m. - 3:00 p.m..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bipin Shalwala can be reached at 571-272-7681. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR

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system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

JHN
March 16, 2007

A handwritten signature in black ink, appearing to read 'Jimmy H. Nguyen', with a stylized flourish at the end.

Jimmy H. Nguyen
Primary Examiner
Technology Division: 2629